

REMARKS

This document is filed in response to the Examiner's office action dated January 08, 2007. The response is drafted in substantially the same order as the issues appeared in the Office Action. Applicants appreciate that Dr. Kemmerer takes time to make helpful suggestions.

RESPONSE TO OFFICE ACTION

I. Claim 1 is objected to because of superfluous word

Claim 1 is amended to remove the superfluous word "mutation" as the Examiner suggests. No new matters are introduced into the application by the amendment.

II. Claim 6 is objected to because of informalities

Claim 6 is amended to eliminate the superfluous strike-through word "its" without introducing any new matters. Applicants appreciate that the Examiner takes time to point out this inadvertent error.

II. Claims 2-5 and 7-9 are objected to as being dependent on objected Claims 1 and 6

Since Claims 1 and 6 are amended herein to remove the informality, Claims 7-9, being dependent on Claim 6, should become allowable as well.

DRAWINGS

Substitute Drawings 2A, 2B, and 2C in compliance with 37 CFR 1.121(d) are enclosed herewith.

CONCLUSIONS

In view of the claim amendment and the submission of substitute drawings, Applicants respectfully submit that all the informalities are removed and all the claims, 1-11, are now in form for allowance. An early and favorable action is respectfully solicited.

Respectfully submitted,



Hsiang-ning "Sean" Sun
Attorney for Applicants
Registration No. 39849
4212 Villanova Street
Houston, Texas 77005-3529
(713)-666-8819 (Telephone)
(713)-665-5230 (Fax)

January 17, 2007

MARKED-UP CLAIMS

1. (Currently Amended) A recombinant hG-CSF-L-vFc fusion protein comprising hG-CSF, a peptide linker, and a human IgG Fc variant, wherein the human IgG Fc variant comprises a hinge, CH₂, and CH₃ domains of human IgG4 with Ser228Pro and Leu235Ala mutations ~~mutation~~ as SEQ ID NO 20.
2. (Original) The recombinant hG-CSF-L-vFc fusion protein of claim 1, wherein the peptide linker (i) comprises about 20 or fewer amino acids; (ii) is present between hG-CSF and the human IgG Fc variant; and (iii) comprises two or more amino acids selected from the group consisting of glycine, serine, alanine, and threonine.
3. (Original) The recombinant hG-CSF-L-vFc fusion protein of claim 1, wherein the hG-CSF-L-vFc fusion protein is characterized by an enhanced *in vitro* biological activity of at least 2 fold relative to that of rhG-CSF on a molar basis.
4. (Original) A CHO-derived cell line producing the hG-CSF-L-vFc fusion protein of claim 1 in the cell line's growth medium in excess of 10 µg per million cells in a 24 hour period.
5. (Original) The CHO-derived cell line producing the hG-CSF-L-vFc fusion protein of claim 4 in the cell line's growth medium in excess of 30 µg per million cells in a 24 hour period.
6. (Currently Amended) A method for making a recombinant fusion protein comprising hG-CSF, a flexible peptide linker, and a human IgG Fc variant, which method comprises: (a) generating a CHO-derived cell line by transforming the CHO cell line with a gene encoding the recombinant fusion protein comprising hG-CSF; (b) growing the cell line under conditions sufficient for expressing the recombinant fusion protein in its the cell line's growth medium at a rate of in excess of 10 µg per million cells in a 24 hour period; and (c) purifying the expressed protein from step (b), wherein the recombinant fusion

protein is characterized by an enhanced *in vitro* biological activity of at least 2 fold relative to that of rhG-CSF on a molar basis; and wherein the human IgG Fc variant comprises a hinge, CH2, and CH3 domains of human IgG4 with Ser228Pro and Leu235Ala mutations mutation as SEQ ID NO 20.

7. (Original) The method of claim 6, wherein in step (b) growing the cell line under conditions sufficient for expressing the recombinant fusion protein in the cell line's growth medium at a rate of in excess of 30 µg per million cells in a 24 hour period.
8. (Original) The method of claim 6, wherein the flexible peptide linker (i) comprises about 20 or fewer amino acids; (ii) is present between hG-CSF and the human IgG Fc variant; and (iii) comprises two or more amino acids selected from the group consisting of glycine, serine, alanine, and threonine.
9. (Original) The method of claim 8, wherein in step (b) growing the cell line under conditions sufficient for expressing the recombinant fusion protein in the cell line's growth medium is at a rate of in excess of 30 µg per million cells in a 24 hour period.
10. (Original) A method for making a recombinant fusion protein comprising hG-CSF, a flexible peptide linker, and a human IgG Fc variant, which method comprises: (a) generating a CHO-derived cell line by transforming the CHO cell line with a gene encoding the recombinant fusion protein comprising hG-CSF; (b) growing the cell line under conditions sufficient for expressing the recombinant protein in the cell line's growth medium at rate of in excess of 10 µg per million cells in a 24 hour period; and (c) purifying the expressed protein from step (b), wherein the recombinant fusion protein is characterized by an enhanced *in vitro* biological activity of at least 2 fold relative to that of rhG-CSF on a molar basis; wherein the flexible peptide linker (i) comprises about 20 or fewer amino acids; (ii) is present between hG-CSF and the human IgG Fc variant; and (iii) comprises two or more amino acids selected from the group consisting of glycine, serine, alanine, and threonine; and wherein the human IgG Fc variant comprises a hinge, CH2, and CH3 domains selected from the group consisting of human IgG4 with Ser228Pro and Leu235Ala mutations as SEQ ID NO 20.

11. (Original) The method of claim 10, wherein in step (b) growing the cell line under conditions sufficient for expressing the recombinant fusion protein in the cell line's growth medium at a rate of in excess of 30 μ g per million cells in a 24 hour period.